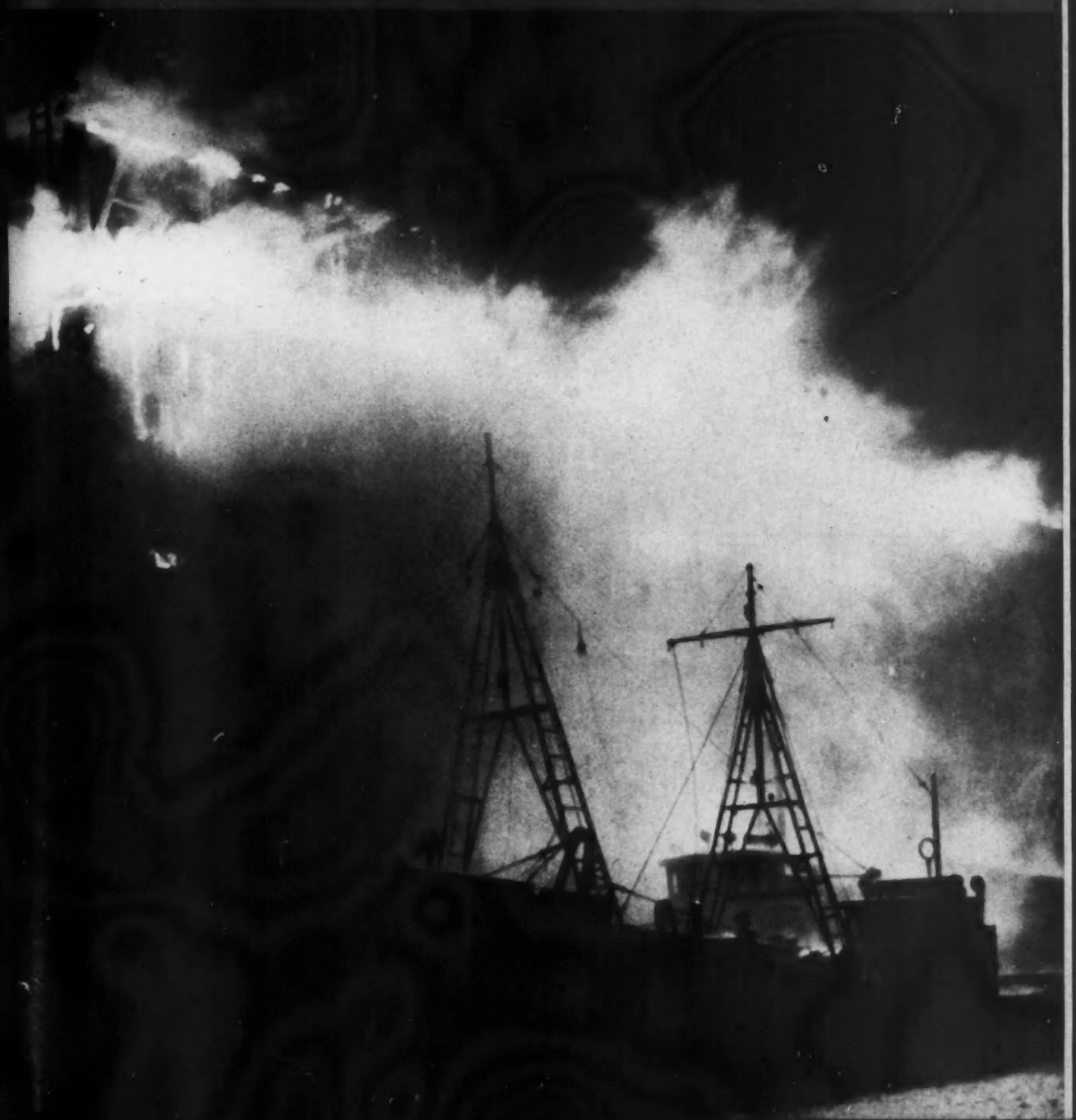
FEBRUARY 1948

FIREMEN

FIFTY-SECOND YEAR • NATIONAL FIRE PROTECTION ASSOCIATION



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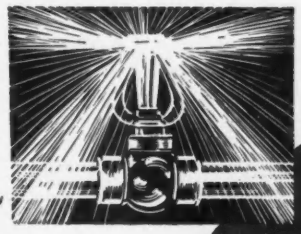

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FIRE · BURGLARY · HOLDUP

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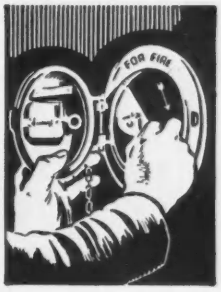

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Automatic Fire Alarms

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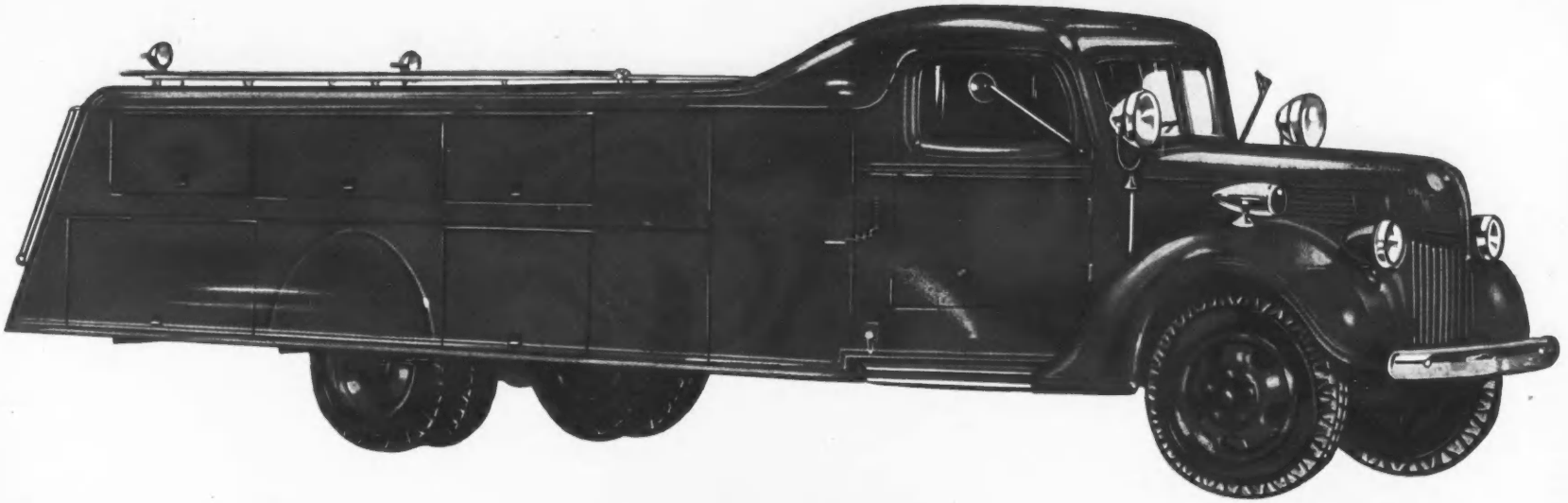

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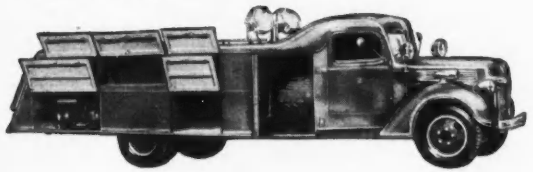

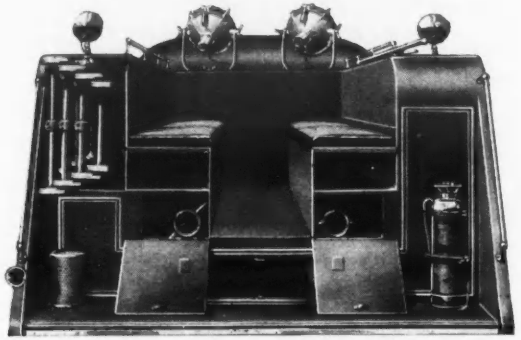

SEATING CAPACITY FOR 8 MEN

Ample room for 4 men on each side with generous aisle space for speedy entry and exit. The seats lift up so that the compartments below can be loaded with fire hose. Suction hose, 4 lengths if desired, carried in compartments where it is instantly accessible. Extension ladders and roof ladders carried in completely protected compartment in left side of body.

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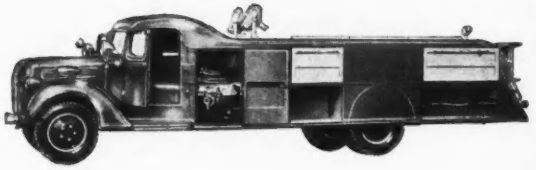

Write for NEW Fire Apparatus Booklet

W. S. DARLEY & CO.

ESTABLISHED 1908 — CHICAGO 12, ILL.

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Firemen

Volume 15 Number 2

WARREN Y. KIMBALL, EDITOR
OWEN L. DELLA LUCCA, ASSOCIATE EDITOR
CHARLES S. MORGAN, ADVERTISING MANAGER

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NFPA Chief Engineer Horatio Bond told the Fire Department Instructors Conference at Memphis last month that the annual fire losses for 1947, estimated at $700,000,000, actually are less than 80 percent of the previous peak year of 1926, if measured in terms of relative physical destruction. In other words, a substantial part of the 1947 loss estimates are inflationary in character and do not represent actual physical destruction. In 1926 dollars, the 1947 losses would be only about $440,000,000.

Building and commodity costs have gone up more than one and one-half times since 1926. The inflationary nature of the current high annual fire loss estimates can be determined by deflating them by a simple average of well known cost indexes, the Index of Building Costs as prepared by the *Engineering News Record* magazine and the Index of Wholesale Prices of Commodities as issued by the U. S. Bureau of Labor Statistics.

The deflated annual fire loss estimates since 1916 show, not a single peak of losses in 1926, but three peaks: in 1922, 1926, and 1932. The index of deflated loss figures (1926 equals 100) reached a low point of 47.0 in 1937 and was 73.3, 74.5 and 78.2 for the past three years. This supports the contention that there is a leveling off process going on in fire loss experience.

Perhaps fire fighters and fire prevention men have not been waging such a losing battle as has been imagined. Nevertheless, losses are still much too high.

THE cover picture this month (*Press Assn.*) shows a large coal elevator burning on the waterfront at Portland, Maine, on December 26, 1947. This four alarm fire fanned by cold winds engaged the services of a large part of the Portland fire department under Chief Oliver T. Sanborn, backed up by covering companies from adjacent departments under a mutual aid plan. Heavy streams from ladder pipes, turret pipes, and fireboat turrets, saved exposed properties. Excellent water supplies at good pressure permitted use of nineteen lines from the land companies. Loss was about $75,000. Before the last fireman had returned from this fire, a second serious blaze occurred in a railroad warehouse in another portion of the city.

THE February issue of FIREMEN reaches you at close to the peak of the winter fire fighting season. This is the time of year, at least in northern areas, when the fire fighters have an opportunity to try out the methods practiced in fire training programs during months of milder weather. If a single safety hint learned at fire school helps some fire fighter get out of a tough situation, the effort was worthwhile.

In olden times fire fighters were expected to take "punishment" for years before they earned reputations as "smoke eaters." Now men learn more quickly due to accelerated training programs, but fire ground experience is still extremely valuable, and the more experienced officers and men should feel a personal responsibility to help new recruits gain confidence. The old rule about men working together and looking out for each other is still a worthwhile safety precaution. Recently a young fireman became trapped by heavy smoke and flame, apparently pulled off his mask, and lost his life. This leads us to repeat the old rule for firemen entering a smoke filled building, particularly when not manning a line of hose: "Know where you are going. Let someone else know where you are going. Work in pairs if possible. Know how you are going to get out if the going gets too tough."

As the winter fire season is the proving ground for the fire training program, each fire department should have some procedure for making certain that fire ground problems encountered this winter can be studied and solved at fire company meetings during the 1948 drill season.

The larger departments as well as many volunteer fire departments have instructors or drill masters who attend important fires to see how the training evolutions are working out under fire ground conditions. It may be found that certain evolutions are out-moded or needlessly hamper fire company operations. The goal of all evolutions should be to obtain the desired result without delay, with a minimum of effort, and with maximum speed consistent with safety. One method may be fast but unduly dangerous. Another method may be extremely safe but too slow for emergency conditions where life is at stake. Other drill evolutions may slow down fire fighters to such an extent that they are likely to be abandoned whenever a chief officer is not looking.

One suggestion for this time of year is that each training officer or training committee keep a record of fire ground problems to be studied after winter fires and spring grass fires have passed. Unless such a record is made, many of the details, important at the time of occurrence may be forgotten in the perspective of later events. Every officer and member of the department should be urged to contribute ideas and experiences from the fire ground so that the 1948 training program will be the most practical that can be devised.

Rebuilding a Fire Department

by PAUL P. HEINZ, CHIEF

Department of Fire Service, New Haven, Conn.

This is the second installment of a paper presented before the Northeastern Fire Protection and Fire Prevention Conference at Hartford last October.

ESSENTIAL to any program of modernizing is training of personnel. There are almost as many views on this subject as there are spokes in a wheel, but it is beyond the realm of debate that the old scheme of teaching recruits to tie knots, raise ladders, stretch hose lines, etc., on a year-round program does not meet present day requirements.

Experience has demonstrated conclusively that the day-to-day fires which the average city department deals with involve small, incipient household outbreaks, burning ash bins, rubbish dumps, short circuited automobile wiring, etc., consequently most firemen do not, within their normal service lives, have sufficient opportunity to become really proficient in functioning under the severe conditions that prevail at large or unusual fires. The inevitable result is that at the moment when teamwork and complete coordination are most urgently needed, individuals tend to become panicky and are apt to fumble their jobs. The answer to this is to establish formal procedures at all department levels, the central idea of which should be training-by-doing. In other words, the experience of dealing with unusual conditions must be simulated for training purposes.

A well-organized training scheme requires, first of all, a soundly planned drill area where every type of fire may be reproduced and every extinguishing weapon used. For example, provision should be made for demonstrating fires involving flammable liquids in tanks, both open and enclosed, on which high-and-low-velocity fog as well as liquid and powdered foams may be used. Similarly, an installation should be set up to teach the men safety limits in approaching fires in high potential electrical zones.

The drill tower, stand-by of every department, should be designed to provide samples of the several types of occupancies and hazards likely to be encountered within the municipal area. It should contain facilities for igniting fires requiring use of water towers and hand lines, and for cellar fires necessitating breathing apparatus and cellar pipes. (Infrequent use of ladder pipes and masks is a constant source of fumbling.)

If funds permit, the training area should have an administration building containing lecture rooms, demonstration equipment, projection facilities, showers, a cafeteria, etc.

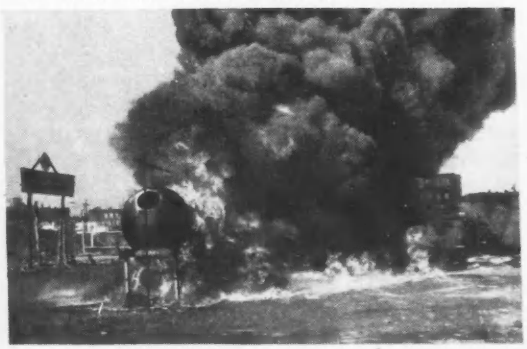
In addition to the recruit and in-service refresher instruction, a promotional outlet and company officer program should be provided. Men should be encouraged to prepare themselves for higher jobs if it is desired that they retain their interest in their present tasks, because if they become convinced that advancement in the service is conferred on any basis other than qualification, that is the very moment when they will concentrate their efforts on tick-tack-toe rather than on the principles of the chemistry of combustion.

Personnel Relations

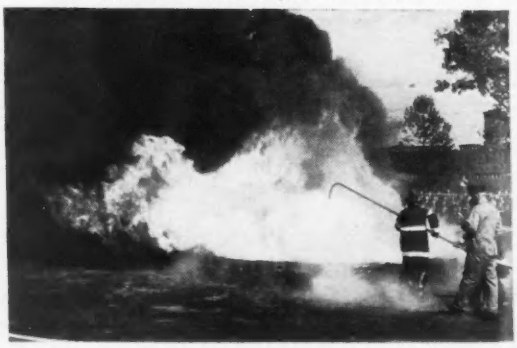
The question of personnel relations looms large in the modernization program today. The attitude of the rank-and-file members of the department toward their jobs hinges upon working conditions, security of employment, pension plans and all the other factors of employee-management dealings, consequently the privilege of collective bargaining cannot be abridged so far as municipal employees are concerned.

My own attitude, which I hope is shared by other departmental officers, is that fire-fighting is a profession wherein the men operate in constant risk of their lives. Being human citizens and family men, they are entitled to the considerations that accrue to all workers; these are their fundamental rights. I suggest, too, that successful and mutually friendly relations will

This is typical of the fierce flammable liquid fires New Haven firemen learned to face with confidence.



Fire fighters attack flaming oil in pit with fog applicator under the watchful eye of the drillmaster.



prevail only when those basic ideas are accepted on all sides.

Public Relations

The public relations part of the fire department's job centers largely upon promoting a community understanding of fire dangers and upon obtaining the cooperation of the citizens in the achievement of safe conditions. This may be accomplished through the medium of educational campaigns and by public participation programs, as well as by talks and lectures before civic bodies, service clubs, women's organizations and other groups.

Frequently following a bad fire, the department may be criticized by the newspapers, especially if heavy loss or damage was sustained. An alert administrator may neutralize or forestall such criticism by a timely release calling attention to concentrations of combustible material, unprotected areas, uncovered stairways, etc., which may have contributed to the loss, while if he can point to recommendations previously made for the correction of these conditions, he may be able to convert the criticism into a favorable reaction.

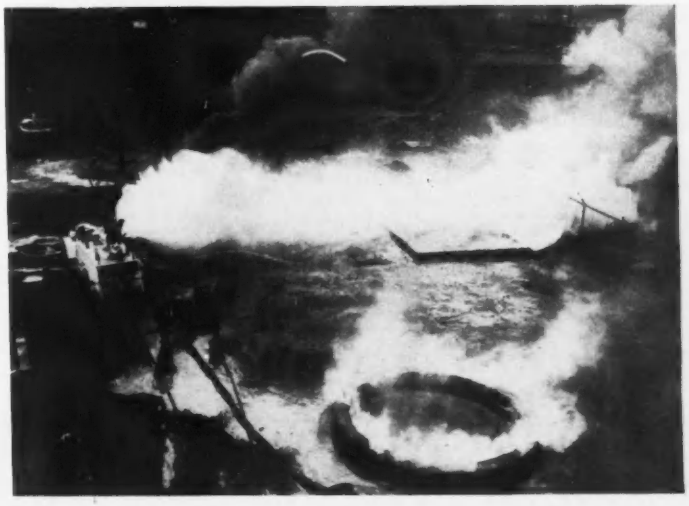
Another important public relations feature is the day-to-day contacts of the men with the people in the city. Old form uniforms with the buttoned-up, droopy-neck-line coats and the little round billycock hats should give way to decently tailored garments and the new eight point caps. Inspectors and investigators representing the department should be taught to remember that they can do a good-will job for the service by developing their contacts as friendly visits rather than as public collisions.

Thoughts should be given to the color of the apparatus. The only reason I know of for adhering to the traditional red is because it symbolizes fire —a not particularly desirable suggestion to most people. White, buff, light green, are all appropriate colors. Dogs, preferably the Dalmation breed, have a definite public relations value.

Long Range Planning

Let me conclude by telling you about a remark recently made by one of our so-called captains of industry. He said he always gets measured for his business suits while sitting down, because since he spends most of his time in that position, his tailor may build into his clothes the necessary allowances for knee-bulge, armhole stretch, etc., thereby permitting him to make the best personal appearance during the greatest number of hours of the day. This is an excellent thought for department administrators to consider, for it is exactly the wrong kind of medicine for them. When a man arrives at the top job in the fire service he should not assume that he has reached a pre-retirement status which allows him to coast along on the seat of his pants until the gates of the green pastures open up unto him. On the contrary, his problems and his responsibilities lie immediately before him, ready for the keenest kind of application. He must plan, he must teach, he must explain, he must make friends for his organization, he must, after rebuilding his department, keep it modern and ready. In short, after twenty or more years on the line, he must be prepared to do a real job of work.

At New Haven the use of the fire department drill tower has not been limited to dry hose and ladder drills as shown by this picture illustrating use of fog nozzles from ladder pipes erected to permit firemen to gain experience at the training ground which may save their lives when they encounter difficult situations at actual fires.



New Haven firemen use 2-500 gpm fog nozzles on deluge truck to extinguish flammable liquid fires in open pits at the fire department's instruction grounds where various types of fires are encountered as part of the regular training program.

MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

Residual Pressures at Given Flows
(disregarding hydrant efficiency)
1000 Ft. Water Main, One Direction Supply

1000 FT.	75 PSI Static at Hydrant	Residual Pressures in PSI at Given Flows in GPM 250	400	500	750	1000
4-in.		46	6	X	X	X
6-in.		70	65	60	44	23
8-in.		74	73	71	67	62

Hydrant Performance

ONE fireman wrote, "never mind the friction loss, all we need is plenty of pressure." Report after report of major fire fighting operations received by the NFPA Department of Fire Record stresses "low water pressure" as a leading reason for failure to control the blaze. Perhaps few persons actually stop to question whether low water pressure is actually the villian of the play or whether, perhaps, some other factor such as a small size main is not the real reason why the fire department failed to get sufficient water and pressure for effective fire fighting.

A fire hydrant standing along the curb is a well known fixture of the urban and suburban scene. In most areas it is recognized that individual properties must be within 500 ft. of a hydrant to be considered under its protection. Some persons have argued that with adequate hose available this distance could safely be doubled but the laying of long lines takes time, requires higher pressures and might reduce the number of streams that could be placed in operation quickly from the nearest hydrant. Also in some instances hydrants are found frozen or defective and wide spacing might mean serious delay in getting lines from the next hydrant. In general it may be said that hydrants are cheaper and more efficient than long lines of hose.

However, the relationship of each hydrant to a community's water system is a matter in which each hydrant has its own personality and an individual story to tell. Some cities have marked hydrants to indicate the size of the main by which they are supplied. Others have painted hydrant tops and caps to indicate the relative strength of the supply that may be expected in gallons per minute. The NFPA has recommended that hydrants have green tops and caps where flows of over 1,000 gpm are available, orange caps and tops where providing 500 to 1,000 gpm, and red tops as a warning where there is less than 500 gpm. The colors should be understood to signify only the capacity of the individual hydrant and not the result to expect when a group of hydrants are employed.

While the marking of hydrants, particularly those of less than 500 gpm capacity is highly desirable it should always be remembered that each separate hydrant has a performance characteristic of its own, that is the sum total of many factors. We will not go into a number of important details such as hydrant design, size of waterway, size of connection to main, except to point out that all hydrants installed should meet hydrant standards of the NFPA and of the American Waterworks Association. All too often hydrants of inferior design are bottlenecks between the main and the hose streams and result in needless hydraulic inefficiency.

Pressure Loss Per 1000 ft. Water Main* (one way feed)

	Flow in GPM
4-in. — 29 psi	250
4-in. — 100 psi	500
6-in. — 15 psi	500
6-in. — 52 psi	1000
8-in. — 36 psi	500
8-in. — 13 psi	1000
8-in. — 27 psi	1500

*Data based upon Hazen & Williams formula with constant of C=100 or average for 15 year old pipe. With old mains, pressure loss may be greater.

Note: With mains supplied from several directions pressure losses will be less.

Now let us take the case of a hydrant where our gauge shows that we have a "static" or non-flowing pressure of 80 psi (pounds per square inch). "Not bad," any fireman will admit. That might permit us to use direct hydrant streams without stopping to hook up the pumper although more and more departments are following the desirable rule to always use the pumper whether such use appears immediately essential or not.

Pressure from the waterworks pumps, or the standpipe, or the reservoir is pressing against the hydrant outlet and gauge tending to give us the feeling of assurance that the water system is backing up the hydrant from which we are planning to run our hose lines.

However, the particular hydrant we have under consideration is supplied by 500 ft. of 4-in. main before it is connected to larger mains of the water distribution grid. A fire occurs and we lay a 300-ft. hose line with the usual 1⅛-in. tip direct from the hydrant and go to work. When we open the nozzle the residual pressure at the hydrant drops approximately 9 psi to 71 psi. This is due to the friction loss in the 4-in. main with some 220 gallons per minute flowing. The nozzle pressure is 35 psi which is not too bad and friction loss in the hose totals 36 psi. Thus we may feel satisfied that the water pressure is good and feel that we can rely on that hydrant in the event there is a bad fire.

The next time the bell hits, we roll out and find a red glow in the sky and

Continued on page 11

The Rural Fire Fighter's Handiest Tool

A story of the development of water sources for fire protection in rural areas of Massachusetts

(Digested from The New England Homestead magazine for November 22, 1947)

By Howard S. Russell

Manager, Mutual Farm Underwriters
Waltham, Mass. (Member NFPA)

"WE could have saved those farm buildings if there had been just 250 gallons more water," said the fire chief sadly. "We used the two booster tanks we had, but it wasn't quite enough."

It was one of the big problems in farm fire prevention that the chief put his finger on. With hydrants, or a good-sized pond beside a hard road, the efficient fire equipment found nowadays within a few miles of most farms in New England can usually hold a fire to the buildings where it started and often kill it off with little loss. It is less and less common for a whole set of farm buildings to go up in flames. The volunteer boys with their efficient equipment and with the knowledge gained through the State Department of Education's fire-training courses, do some wonderful work — provided they have water to work with.

It is curious, though, how many farmers, some of them big business men, will spend thousands of dollars for additional buildings and new machinery but put not one cent into water supply to save those buildings if they catch fire. "Oh, but we've got a beautiful water supply — a driven well," or "a spring back in the hill," they'll tell you.

That serves very well for family and stock, but the pump and tank are in the house basement or in the barn cellar. If that building gets afire, how would you get water? And what good is it to the fire department anyway, if the only way to tap that wonderful source of water is a ¾-inch nipple on a faucet somewhere? A fire department needs a big supply, that they can drop a full size suction line into, even through two feet of ice, a supply plentiful enough so that their 500-gallon-a-minute pumper won't make a dent in it, and they can hook on two or three others if they are available.

No, if there is no town hydrant system, the real answer to the problem is the water hole, a deep stream, or the farm pond with at least 50,000 or 100,000 gallons available winter or summer, drought or wet spell. If a pond is handy, that's fine; but apparatus, to reach it, needs a good hard road and there must be a solid footing on the shore where the pumper won't sink in mud. Best of all is a dry hydrant beside the public road with a pipe leading from the pond at a depth where it can be tapped winter or summer.

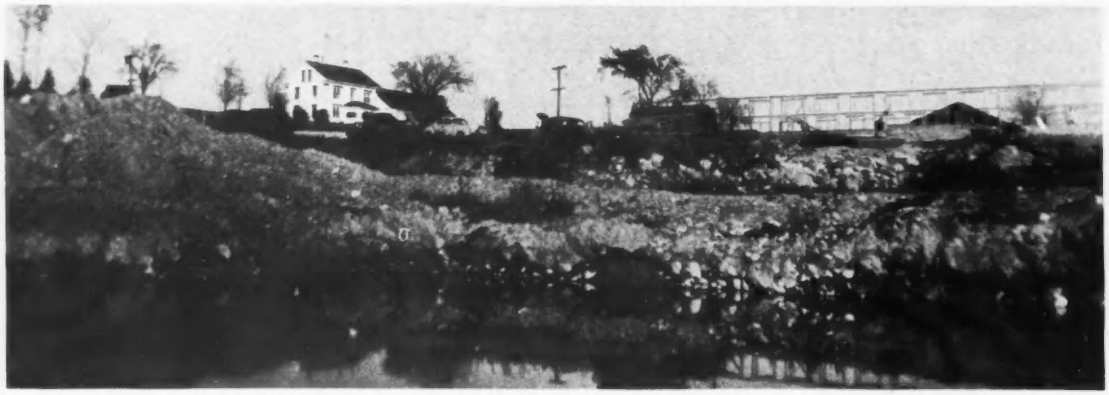
Another way is to have the work done by the public. In Massachusetts, construction of water holes began in the earliest P.W.A. days, as a means to meet unemployment. Under a plan worked out with the State Department of Agriculture, scores of water holes were constructed in the southeastern part of the state, and the program later extended to other areas. The work was done chiefly in winter. Some holes, well located, are still in use. Others, in the rush of getting started, were put where water lies only part of the year. Some have silted up and become useless. But real progress was made in many communities which saw the benefits, until war stopped the work.

Granville, an apple town west of Springfield, has built 25 or more through small appropriations in the past couple of years. Some of them, they say, cost no more than $25 apiece. A number of farmers built their own.

A good example of public effort comes from the little Worcester County dairy town of New Braintree. New Braintree is all farming: a town of hills and rich pastures, where cow population is a good deal beyond that of humans, and where barns run big. Its strong soil raises large crops of good hay. So a good many spontaneous ignition fires have taken sets of farm buildings there: the town lies also in a belt where lightning strikes often. Hence its fire record has been bad.

With no apparatus of its own the town relied on neighboring fire departments to come when somebody telephoned, and it was often too late. There was no regular water supply, though brooks run down the valleys and wet spots are numerous. Two years ago the town appointed a committee to work with the Selectmen in looking into better fire protection. Howard Havens, a leader in many good works, was made chairman. At Town Meeting last February, the committee brought in four recommendations; the town adopted them all. 1st — They laid out a clear method of telephoning fire alarms. 2nd — They advocated a carefully worked out system of response by neighboring fire departments under an agreement with each town. 3rd — They proposed a

In the small Massachusetts town of Ashby near the New Hampshire line, the fire department made a splendid stop, one cold night with a 40-mile wind last winter. House and barn were connected. The fire started in the house and took that; but the department, drawing water from a brook 2400 feet away, cut the flames off at the shed connecting the buildings.



In Westboro, Mass., after Carl Friberg lost his buildings last summer for lack of water, he, Gordon Fenno across the pike, and three other neighbors got together and hired a bulldozer at $10 an hour. Though the blue gravel proved hard digging, today there is a 100,000 gallon supply seven to nine feet deep near the frame of Mr. Friberg's new building; cost $125, which the neighborhood divided, since it protects them all.

water hole program. 4th — They plan to look further into the matter of a local fire department.

The town voted $1,000, a goodly amount for a town of only 400 people and turned it over to the committee and the Selectmen, whose chairman is dairyman A. D. Grise.

The Worcester County Agricultural Extension Service, whose director is Sidney Vaughan, was called in and Associate County Agent Walter Shaw, himself a fire department volunteer in another town, came to lend help and advice. The Northwestern Worcester Soil Conservation District had just started operations,with CharlesTurner in charge in Worcester County. Its engineers, Roscoe Johnson and Rano Raffinelli, laid out the water holes. Insurance people helped in every way possible. And the committee itself worked and Forest Fire Warden Clarence Hibbard assisted in many ways. Concrete results to date are:

Agreements have been arranged with four surrounding towns under which each fire department responds to calls from the part of New Braintree it can reach most easily, with the others called later if necessary. Sheets have been supplied each householder and each fire department listing the farms to be covered by the North Brookfield, West Brookfield, Barre Plains and Hardwick Departments. The Extension Service mimeographed a card to be tacked up beside each telephone, which says: "In case of fire on this property call ————," listing both a central New Braintree number and the proper out-of-town department. At the most recent fire, apparatus was on hand in 10 minutes. The committee has mapped all sources of water in the town and supplied the fire department with maps showing the names of the roads, and names of farms to be covered. Of course, New Braintree expects to pay the out-of-town departments when called.

Meanwhile the County Soil Conservation District has been cooperating. Three large water holes have been built on farms in strategic places, each with about 50,000-gallon capacity. The one near the center, will have seven feet when filled. The rough dirt sides will be dressed, seeded and riprapped: the whole will be fenced. Apparatus can drop suction from a road only 20 feet away. It protects the church and village store 1,000 feet away; the consolidated school 500 feet distant, a big farm and other buildings. The village center is on the crown of a hill, but fire trucks from all four towns nearby can reach it easily by hard roads and get right to work when they get there.

Just off a dirt road near the main through route, 1½ miles northeast of the village, a slightly smaller hole is dug in a field 125 feet from the road. A solid approach is being built for fire apparatus and the town plans to keep it clear of snow. One set of farm buildings is only 300 feet away, another farm 700 feet, and it will serve others further distant.

Three miles northwest of the village the Conservation Engineer located a 60,000-gallon water hole in a wet spot 500 feet from the tar road; here, too, a driveway is being built. The nearest farm is only 600 feet, another about 1,500 feet. Despite many weeks of drought, the holes were soon full. They are just as useful for stock watering.

As always when money is spent in a small town, there was some criticism when the appropriation was made, but now that they see the results people are asking for more.

The importance of a solid "stance" for fire apparatus cannot be emphasized too much. Even where a pond or stream is available, if edged with marsh or mud, or if the shore runs off shallow, the fire department is handicapped. Three houses burned in one town not long ago with a marsh-bordered river only a few hundred feet away. Either build a water hole alongside the paved highway or build a road to the hole. Water holes like this have been noted recently in effective use in the towns of Easton in southern Massachusetts, Warren in western Worcester County, and other places.

The other alternative is the dry hydrant, or a deep canal dug through the marsh to the road. The waters of Nipinicket, a shallow lake in Bridgewater, are made available to protect nearby buildings through pipes run underground to dry hydrants beside the road. In Hingham, too, the dry hydrant is a favorite. In Westport solid places have been located beside tidewater for apparatus to set up.

In almost every town all over New England there is ample water. The important point is to have it ready for use in case of fire.

Farmers on hilltops will tell you: "We haven't any water but the well." Yet, water from the roofs of their buildings, run into a cistern nearby, would go far toward protecting them against loss.

On Cape Cod some years ago water from the milk room on the Leatherbee Farm ran off into a hollow behind the buildings, bunched close together. When the big garage close by the barn caught fire, the Falmouth Department confined the flames to the building

where it started, saving $75,000 worth of other property. It was the milk room run-off in the hollow that enabled them to do the trick. A big poultry plant not many miles off still relies chiefly on a tidal stream nearly empty at low tide. Yet a small expenditure for excavation and gravel fill alongside would give this farm a dependable source of water for fire purposes.

Building a water hole is not the whole of the matter. To be effective they must be maintained. Cattle tramping the mud on the edge will fill them; so will silt from a brook. A small annual town appropriation for maintainence will keep the public system usable.

★ ★ ★

Hydrant Performance

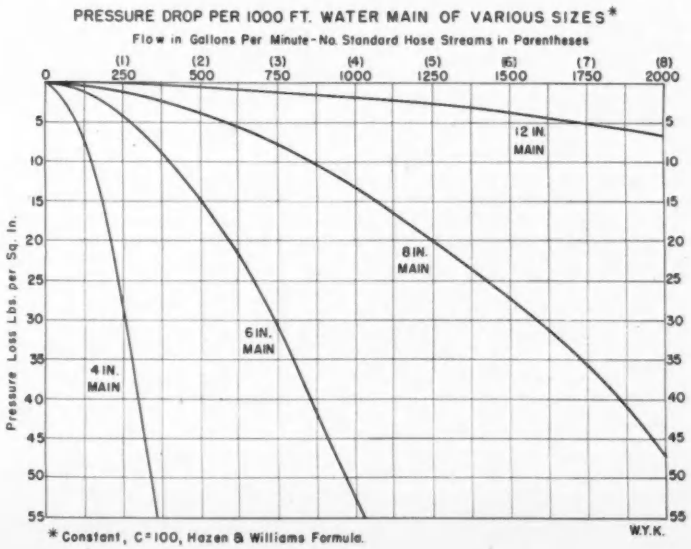
Continued from page 8

a brisk fire that requires several streams to confine it to the area of origin. We slap two lines on our supposedly "good" hydrant with the 80 psi static pressure but our nozzle pressure drops disappointingly into the twenties. Even after reducing the size of the nozzle tips we find that the hydrant pressure has tumbled to a little over 50 psi because the greater flow from the two lines has greatly increased the friction loss in the small main. If the main has been in the ground for some time without cleaning, it is likely that incrustation has decreased the useful area of the pipe and despite the initial high pressure it may be impossible to supply two good streams even though a pumper is used and all available water taken at close to zero residual pressure at the hydrant.

Often outlying areas of communities are supplied with water through comparatively long runs of 6- or 8-in. main, often fed from only one direction. In such cases there may be very high pressure loss in the event required flows exceed 500 gpm. The accompanying tables and illustrations are based upon losses in only 1,000 ft. of pipe. For example, a mile long 6-in. main fed from one direction will have 79 psi loss with 500 gpm flowing and an 8-in. main of the same length and not part of a loop system can lose 69 psi with 1,000 gpm flowing (four 1⅛-in. tips). Even with a pumper operating at very low residual pressure at the hydrant it may be impossible to get the required flow.

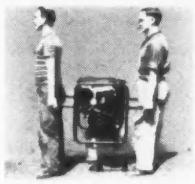
It should be remembered that in general, hydrant flow tests are made by opening three or four hydrants in a given neighborhood to find available group flows at various residual pressures. However, if the available supply is somewhat limited, that fact will be indicated by a marked pressure drop with two streams (400 to 500 gpm) flowing from a single hydrant. Remember that as pressure drops, flow also drops so do not guess at flows but take pitot readings at the nozzles to find out how much water is actually flowing and the actual pressures.

We have not taken into consideration the fact that domestic and industrial use of water varies constantly in any neighborhood and required fire flow should be the amount needed in addition to normal domestic requirements.



THE HALE TYPE FZZ PORTABLE

Compact—
Powerful—
Practical—



FZZ can be easily carried. Also available on truck-type wheels or mounted on rubber insulated steel channels.

Frequent reports reach us telling of new uses for the Hale FZZ Portable Pumping Unit. Here are just a few of the many practical ways this unit is making itself useful to fire-fighters:

- **For fighting field or forest fires from moving trucks.**
- For "wetting down" and standby use, thus releasing major equipment.
- For pumping out flooded cellars and elevator shafts after fire, flood or other emergency.
- For relaying water to pump or booster tank from sources inaccessible to major Fire Pumpers.
- For factory protection in fighting fires before major equipment arrives.
- For fighting oil or other type fires requiring foam. (Built-in foam proportioner available when specified.)

Write today for FZZ folder. If your Fire Company is interested in a demonstration, let us know and we will forward your request to the nearest Hale dealer.

HALE
FIRE PUMP COMPANY
Conshohocken, Pa.

NOW With REGULATION HEAD and FRONT

CAIRNS

"FLINT-FLEX"

Here's the latest (No. 725) model of this sturdy plastic helmet, designed to take standard front pieces interchangeable with CAIRNS regulation leather or aluminum helmets. The rugged one-piece construction with embossed reinforcing ribs is retained. The material is light—insulates against heat and electricity—resists crushing or fracture. And of course the FLINT FLEX HELMET has the removable snap-in CAIRNS CUSHION LINING. Prices are moderate—deliveries prompt. Write for Catalog 32A.

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Outfitters to Firemen Since 1836

(ALLWOOD), CLIFTON, N. J.

CAN PAY for ITSELF IN 6 MONTHS

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5" TRUE parabolic, silver plated reflector; 25,000 c.p. beam; ⅓ mile range; sturdy metal case; corrosion proof terminals

Only 72 ounces

• Will not spill in ANY position

Battery change in 10 seconds without returning to factory

NON-SPILLABLE **RECHARGEABLE**

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MASTER-LIGHT

for FIREMEN
POLICE and WATCHMEN

Write for new Emergency Lighting Bulletin

CARPENTER LIGHTS

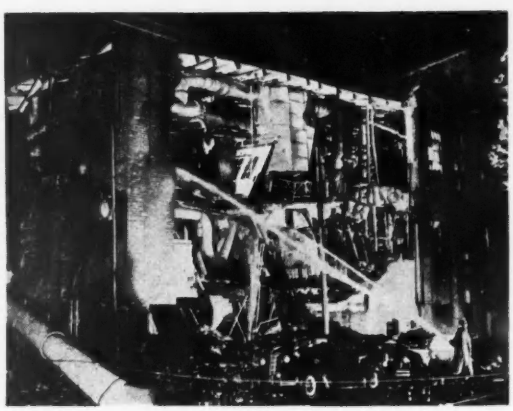
168 MASTER-LIGHT BLDG.
BOSTON - 45 -
SOMERVILLE, MASS.

Recent Interesting Fires

The office building of the Continental Can Co. in Cambridge, Ohio, was destroyed Sunday morning, November 9, with $150,000 loss. Neighbors observing smoke for a half hour assumed workmen would give an alarm in case of fire. Blaze was believed started by workmen installing piping between floors. Meager water supply prevented effective streams.

Press Assn.

This million dollar blaze in Cornwall, Ontario, on the day before Christmas destroyed 11 business establishments and made 25 families homeless. Fire was discovered belatedly in the basement of a dry goods store. Occupants of apartments above the stores rushed out into zero weather in night attire. Due to intense heat the fire spread through common part walls supporting wooden joists on both sides, igniting adjoining structures. Auxiliary firemen and municipal workers helped the permanent firemen fight the blaze.



Acme

Two men were killed and 11 others seriously injured on December 15, in an explosion of acetone vapors in a largely fire resistive solvent recovery building of a plant manufacturing plastic products at Newark, N. J. Damage is estimated to exceed $250,000. While automatic equipment was installed to sample explosive atmosphere in the duct system, vapors escaped into the building areas not so protected, and lacking positive ventilation. Despite damage to sprinkler piping by the explosion, sprinklers helped control the fire.

Press Assn.

The little Connecticut River town of Bradford, Vermont (700 population) suffered an estimated $250,000 loss from fire discovered at 6:20 A.M. on December 17. Starting in a basement flames involved wooden buildings housing a 5 and 10 cent store, grocery, a newspaper office and apartments. Occupants had difficulty in escaping due to dense smoke pouring up the open stairway. The local fire department was assisted by neighboring departments.

Press Assn.

Blazing gasoline storage tank at a refinery at El Segundo, California, on December 5. An explosion, believed due to lightning, wrecked the tank and killed one workman.

Acme

The Senior High School at West Chester, Pa., was destroyed by fire of unknown cause on December 22, with loss of $240,000 (much higher replacement cost). Firemen from Coatesville, Downington, Melvern, Paoli, and Bryn Mawr assisted three local volunteer companies in saving the attached Junior High School.

A million dollar fire occurred in a tooth pick factory at Strong, Maine, on December 4, when an explosion in the wood waste removal system caused a flash fire, opening many sprinklers and damaging sprinkler piping. There was a delay of 15 minutes before the plant mechanic arrived to start the fire pump. Some 700 persons were thrown out of work.

Press Assn.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN
Protective Clothing

for Men of Action!

Here's Protection and Comfort in Your Hazardous Work of Safeguarding Life and Property Against FIRE!

Modern fire fighting calls for *specialized* protective clothing . . . clothing that safeguards the fireman's life on every run . . . clothing that enables him to use his equipment to the fullest advantage.

Every Midwestern product combines the thoughts and suggestions of practical Fire Chiefs and firemen from every section of the country . . . and every purchaser profits from years of Midwestern research and experience. That is why the famous Mackinaw Coat and other Midwestern clothing have embodied in their design every feature necessary for the protection and comfort of firemen.

In our vast selection of crude rubber materials you will find a type of fabric suitable for your climate and needs. The softness and flexibility in the high-grade materials used are your assurance of long time service and comfort. Many Fire Chiefs are now including Midwestern clothing in their regular yearly budget and by placing your order early you can be assured of this adequate protection when needed.

For complete information have your Midwestern dealer show you our new garments now manufactured from crude rubber compounds. A letter to the factory will also bring you material samples for your inspection.

We now have available: White, Ivory and Brown crude rubber coats for Chiefs, Assistants and other officers; also all sizes short and ¾ length felt lined Firemen's boots for immediate shipment.

MIDWESTERN MFG. CO. MACKINAW ILLINOIS

Manufacturers of the Famous MACKINAW Coats

Propello-Ray Light

. . . CLEARS THE WAY!

A BRILLIANT, roving blade of red light that stabs through the darkness giving instant warning to pedestrians and other traffic . . . and gives better protection to your own vehicle! In the daytime, this powerful beam of light flashes a warning to all, signalling that your vehicle is approaching.

Federal's Propello-Ray Light operates silently, without gears or similar complicated parts. All the moving parts are enclosed in streamlined chrome weatherproof housing to guarantee dependable, reliable service.

And for added protection, the efficient Propello-Ray Light is incorporated into three of Federal's fast-selling Traffiking sirens.

Get detailed information and prices on the complete line of Federal sirens. Write for bulletins today.

Model 67
an all-purpose siren for heavy duty, characterized by its deep tone.

Model 78
a double tone coaster siren that has a full two minute roll.

Model C-6
Federal's most powerful coaster siren, supreme in sound output and coasting.

(The siren and light are on separate circuits so that either signal will operate independently).

FEDERAL ELECTRIC COMPANY, Inc.

8717 S. State St. SIREN HEADQUARTERS Chicago 19, Ill.

If you have two or more extra-hazardous processing areas or storerooms in your plant, you can safeguard them with one C-O-Two carbon dioxide system. The instant a fire starts in any one of the spots, simply turn a selector valve to flood the threatened space with clouds of cold, dry carbon dioxide gas. The fire is stopped quickly and easily.

C-O-Two is especially recommended for fires in electric equipment, motors, solvent tanks, spray booths, and flammable liquid storage. It is non-conducting, non-contaminating, non-deteriorating. It penetrates the smallest crevices and equipment, finishes, or fabrics.

Find out more about modern, clean carbon dioxide fire protection. Write for your free copy of "C-O-Two Kills Fire . . . Saves Life!"

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Sales and Service in the Principal Cities of U. S. and Canada
AFFILIATED WITH PYRENE MANUFACTURING COMPANY

Please send me your free booklet, "C-O-Two Kills Fire . . . Saves Life."

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Title_____

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New Firemen's Association in Northern Virginia

DELEGATES from fire departments in a fourteen county area met in Luray, Va. on December 12, 1947 and formed the Northern Virginia Firemen's Association. During the one-day session a constitution and by-laws were adopted and Luray was selected for the 1948 convention.

Five officers were elected for a term ending in June and four members of the executive committee were elected for terms of from one to four years. All departments becoming members are equal in voting rights — each has three votes.

Officers elected include J. E. Will, Luray, President; Chief F. A. Stananyer, Front Royal, Vice President; W. F. Brittle, Warrenton, Secretary.

Delcalcomania on Phone Saved Lives

IT is not often that a protective measure adopted by the fire service produces results measured in lives saved as quickly as occurred in Prince Georges County, Maryland, where decalcomanias with the Fire Board's emergency telephone number were affixed to all telephones in the County. (See FIREMEN, October 1947, page 10; December 1947, page 19.)

On December 16, Irving Lamphier of Mount Rainier awakened to find his home filled with coal gas. He managed to open an upstairs window before grogginess repeatedly overcame him. After three hours' struggle he reached the phone. Too weak to use the phone book he dialed the emergency number on the decalcomania and firemen broke in to rescue Lamphier and his wife. The deadly gas was traced to a dislodged furnace smoke pipe.

Ship to Shore Fire Signal Adopted

A fire signal for ships, as suggested by the National Fire Protection Association was unanimously adopted by the American Association of Port Authorities at their annual convention in West Palm Beach on December 5th according to Rear Admiral Frank D. Higbee, USCG, ret., port warden of Los Angeles.

This signal applies to fire on board a ship in port or at the dock where it is moored. It will consist of five prolonged blasts of whistle or siren repeated at intervals.

The Cost of a
DELAYED ALARM

The spread of flames is accelerated by a Delayed Alarm — the attendant costs involve interruption of business and income — and frequently human life.

More than 1,000 communities with volunteer fire departments are now protected by Gamewell Fire Alarm Systems. A few boxes, properly distributed, will materially strengthen the fire defenses.

The Diaphone horn with coded signals saves time by directing the firemen to the scene of fire — or the boxes may be arranged to operate your existing public alarm.

DIAPHONE HORN
Operated by
Compressed Air
The Circuit is
shown connected
with the Electric
Control Valve.

Include In Your Post-War Plans
An Adequate
FIRE ALARM SYSTEM

We invite your inquiries

GAMEWELL FIRE ALARM BOXES
Connected In Series
In Closed Metallic Circuit

110 VOLT A.C.

GAMEWELL CONTROL UNIT
VITAGUARD SYSTEM

With Self-Winding Register — Manual Transmitter for Sounding Alarms Received By Telephone — Control Switches — Test Switches and Instruments — Batteries, Rectifiers and Line Terminals Mounted Within the Cabinet.

THE GAMEWELL COMPANY
Newton Upper Falls, Massachusetts

MEMPHIS

Goes CIRCUL-AIR

Memphis—home of the annual Fire Department Instructors' Conference—has adopted Circul-Air as their standard drying equipment.

Chief Connie O'Sullivan says, "They're great driers. We have had eight (8) in service for several years and would like them in all our other stations."

Scores of other "repeat" buyers are equally enthusiastic about the Circul-Air Hose Dryer. It's ideal for cities, towns and fire districts of any size, or for industrial fire departments.

CIRCUL-AIR THE AIR-CONDITIONING

FIRE HOSE DRYER

- ✓ Dries hose in a few hours
- ✓ Saves space—fits in any corner
- ✓ Keeps all hose ready for service
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- ✓ Reduces new building costs
- ✓ Improves station design
- ✓ Dries fire clothing, too

WRITE FOR FREE BOOKLET

New 24-page booklet shows illustrations and plans of smart, new, functionally designed fire stations. Needed by every Building Committee, Fire Chief and Fire Department Architect. Your free copy is now available.

THE CIRCUL-AIR CORPORATION
575 East Milwaukee Street
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MEMBERSHIP REPORT

Every member receives a handsome membership certificate illustrating the history of fire protection.

READERS are reminded that in many communities several fire companies may be members while others are not. It is our aim to get FIREMEN to as many firemen as possible. See what you are able to do to encourage companies to enroll.

At present, there are 1,324 companies enrolled in the Volunteer Fire Company Section of the NFPA. 21,217 firemen in these companies receive FIREMEN.

New members of the Volunteer Fire Company Section are:

UNITED STATES

Bishop Vol. Fire Dept., Bishop, Calif.
Clifford Fire Dept., Clifford, Mich.
Coon Valley Vol. Fire Dept., Coon Valley, Wis.
Cumberland Valley Vol. Firemen's Assn., Waynesboro, Pa.
Green Lane Fire Co., Green Lane, Pa.
Lemay (Fire District of), Lemay, Mo.
Upper Salford Vol. Fire Co., Salfordville, Pa.
Park City Vol. Fire Dept., Park City, Utah

CANADA

Mimico Fire Dept., Mimico, Ontario

National Fire Protection Association, International

Associate Membership

VOLUNTEER FIRE COMPANY SECTION

($10 annual dues) Eligible:

(1) all bona fide volunteer fire organizations in any community.

(2) all fire departments and companies in communities of less than 25,000 population.

(3) all industrial fire brigades.

Member volunteer fire companies receive ten copies of FIREMEN magazine each month, mailed to the homes of individual firemen. Beyond the ten, additional copies of FIREMEN cost $1 per year.

Volunteer Fire Company Section members, receive, at their headquarters, one copy of all publications sent to NFPA associate members.

ASSOCIATE MEMBERSHIP ($10 annual dues) Eligible: Individual fire department officers, firemen, and others interested in fire safety. NFPA associate members in the fire service receive, one copy of FIREMEN magazine monthly, the NFPA **Quarterly,** the monthly **News Letter,** technical standards, popular bulletins and posters.

All associate members have one vote in Association affairs.

* * *

New Edition of NFPA Flammable Liquid Codes

THE 1948 edition of the National Fire Codes, Volume I, Flammable Liquids, Gases, Chemicals and Explosives is now available. This new book includes all the NFPA standards in this field incorporating all the new and revised standards adopted by the Association since the publication of the last edition in 1945.

This new edition is attractively bound in red cloth with gold stamping uniform with other volumes of the National Fire Codes Series. The 600-page book is priced at $4.

RUSS PRIESTLEY

"Hold it a while Flannigan—toasted marshmallows have always been my weakness."

A LOT OF FIRE!

Every room ablaze before fire department was notified . . . but Bean Fog Fire Fighter stops Maryland farmhouse fire.

Read how Burtonsville Volunteer Fire Department put out this "tinder-box" fire with their new Bean High-Pressure Fog Fighter as disclosed in this letter from Chief J. M. Seibel.

Burtonsville Volunteer Fire Department, Inc.

Burtonsville, Maryland

MORRIS SEIBEL
Chief

December 22, 1947

John Bean Mfg. Co.
Lansing, Michigan

Gentlemen:

Enclosed find fire report and pictures of a house fire that we put out recently.

This fire occurred on December 10, 1947. The house was occupied by a man, his wife and five children. An elderly invalid lady also lived in one room and was cared for by the man and his wife. The woman had got her husband off to work and children off to school, and had gone back upstairs for a while.

The whole downstairs, with the exception of one room, was on fire when she discovered it. By the time she got the younger children and the invalid lady out and ran a quarter of a mile to a telephone, the fire had a head start. When we arrived the entire house was in flames.

We are very proud of our new fire fighter and the job we did on this house.

Yours very truly,

J. M. Seibel, Chief

The Bean Fog Fire Fighter which did the job for the Burtonsville Volunteer Fire Department. Bean High-Pressure Fog Fire Fighters carry their own water supply—provide two guns of 30 gallons each—850 lbs. pump pressure. Delivered complete with all accessories.

UNDERWRITERS' LABORATORIES APPROVED

BEAN *original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

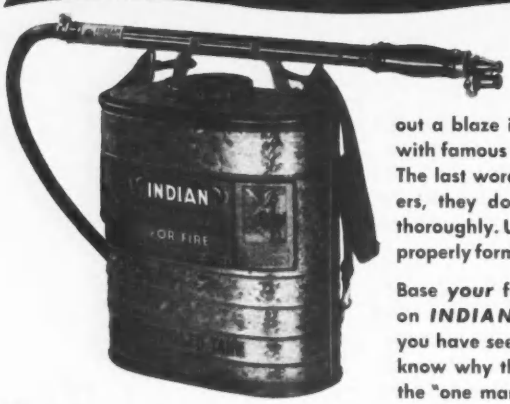
FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., DEPT. 127, LANSING 4, MICH. • BEAN-CUTLER DIVISION, 426 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

and there is ONLY ONE

INDIAN FIRE PUMP



Yes sir, you can't name a quicker or easier way to put out a blaze in its early stages than with famous *INDIAN FIRE PUMPS.* The last word in portable fire fighters, they do the job quickly and thoroughly. Use either clear water or properly formulated wetting agents.

Base *your* fire protection program on *INDIAN FIRE PUMPS.* Once you have seen them in action you'll know why they are so often called the "one man fire department."

Send for catalog in full color—it tells all about *INDIAN FIRE PUMPS* and contains many letters from enthusiastic users.

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Fred E. Barnett Co., 600 Spring St., Klamath Falls, Oregon
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CANADIAN AGENTS:
Bingham & Hobbs Equip. Co., 395 W. 5th Ave., Vancouver, Canada
Duke Equipment Co., 297 Duke St., Montreal 5, Canada

Need an Ambulance?

Here's a good one at a bargain price! Cadillac 1939 with Sayers & Scoville body. Complete with pneumatic tired aluminum cot, siren with flashing red light, heater, two attendants' seats, good tires, large cabinet, mattress. Mechanically sound. $1750 or best offer.

Glen Echo Fire Department
Glen Echo, Maryland

FOR SALE

Seagrave Fire Truck, Model F 750-gal. pumper adapted down to 500 g.p.m. with 100-gal. water tank; also Booster hose.

For details, write

Capt. Henry A. Prokopp
38 Grove St., Mt. Kisko, N. Y.

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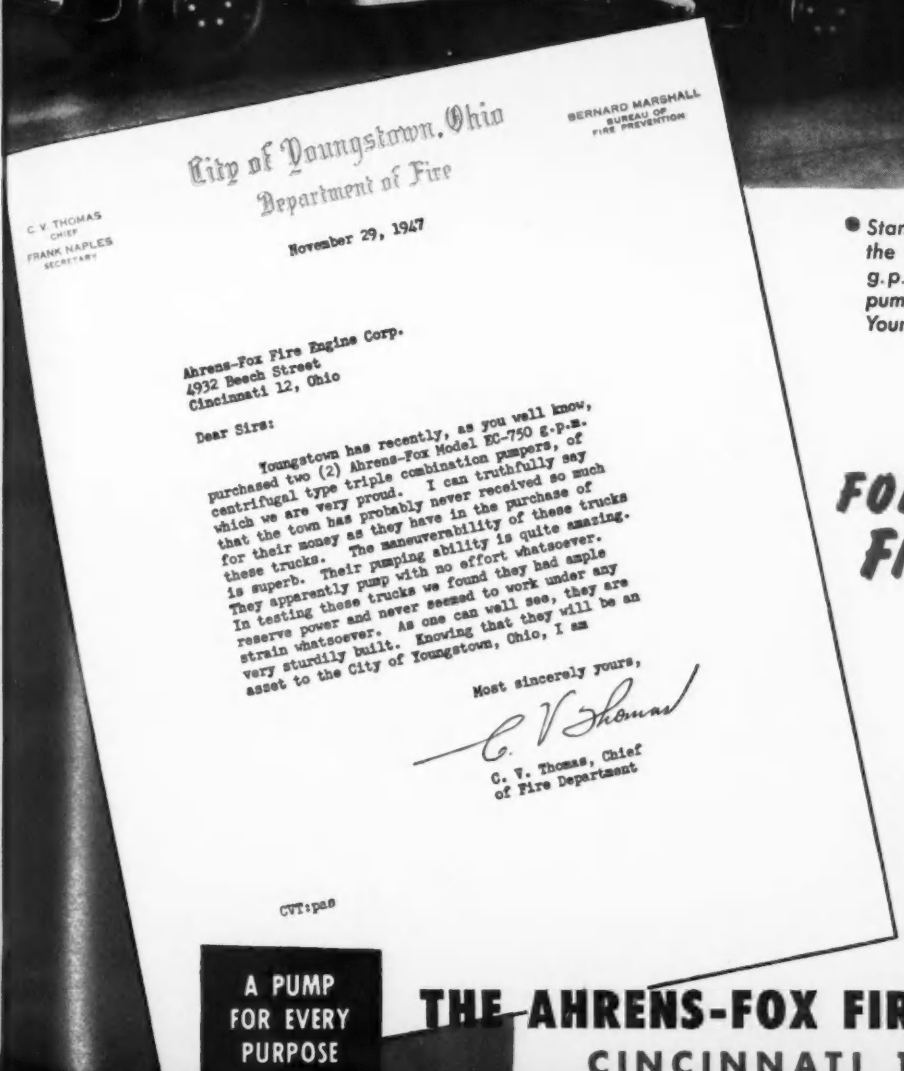
Two New Pumpers stand guard at Youngstown

They're AHRENS-FOX



City of Youngstown, Ohio
Department of Fire

C. V. THOMAS, CHIEF
FRANK NAPLES, SECRETARY

BERNARD MARSHALL, BUREAU OF FIRE PREVENTION

November 29, 1947

Ahrens-Fox Fire Engine Corp.
4932 Beech Street
Cincinnati 12, Ohio

Dear Sirs:

Youngstown has recently, as you well know, purchased two (2) Ahrens-Fox Model EC-750 g.p.m. centrifugal type triple combination pumpers, of which we are very proud. I can truthfully say that the town has probably never received so much for their money as they have in the purchase of these trucks. The maneuverability of these trucks is superb. Their pumping ability is quite amazing. They apparently pump with no effort whatsoever. In testing these trucks we found they had ample reserve power and never seemed to work under any strain whatsoever. As one can well see, they are very sturdily built. Knowing that they will be an asset to the City of Youngstown, Ohio, I am

Most sincerely yours,

C. V. Thomas

C. V. Thomas, Chief
of Fire Department

CVT:pas

● *Standing in front of Fire Station No.7 are the two new Ahrens-Fox Model EC-750 g.p.m. centrifugal type triple combination pumpers recently delivered to the city of Youngstown, Ohio.*

FOR DEPENDABLE FIRE PROTECTION rely on

AHRENS-FOX

A PUMP FOR EVERY PURPOSE

THE AHRENS-FOX FIRE ENGINE CORP.

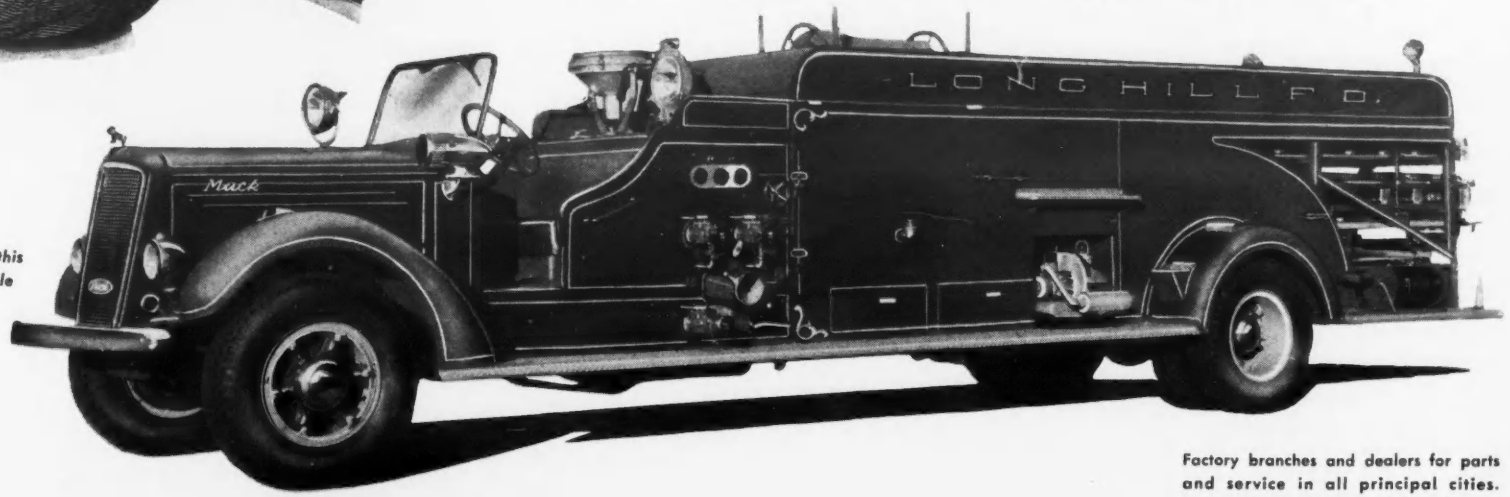
CINCINNATI 12, OHIO

THIS MAN IS PAID TO BE FUSSY!

• Every Mack fire apparatus crankshaft must pass his unhurried, searching inspection. On a fine surface plate with gages of almost every known type, he checks each surface minutely. He is a master crankshaft tester, and his is but one of many steps that Mack takes to insure durable, smooth-running crankshafts.

For there is no guesswork about the quality of Mack parts. Every new development designed for Mack fire apparatus undergoes exhaustive laboratory tests before it can qualify as a standard Mack production part. And during every step in its manufacture, each Mack-made part is checked and counter-checked for accurate tolerances and freedom from flaws.

Such accuracy is only possible where the manufacture of all vital parts is under such close control. It is another indication why Mack fire apparatus in over 1,000 communities are relied on for outstanding performance and dependability.



Pride of Long Hill, Conn., is this new Mack Type 75 quadruple combination ladder truck with 750 GPM centrifugal pump.

Factory branches and dealers for parts and service in all principal cities. In Canada, Mack Trucks of Canada, Ltd.

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